

## REMARKS

Claims 1-22 and 35 are pending in this application. By this Amendment, claims 1, 3, 5, 11, 13, 15, and 35 are amended. Reconsideration in view of the above amendments and following remarks is respectfully requested.

### 1. 35 U.S.C. §102(b)

Claims 1-3, 5, 11-13, 15 and 33 are rejected under 35 U.S.C. §102(b) as allegedly anticipated by *Tamol et al.* (U.S. Patent No. 4,874,000, hereinafter referred to as "*Tamol*"). The rejection is respectfully traversed.

Claim 1 recites a cut filler composition comprising tobacco and an oxyhydroxide compound other than aluminum oxyhydroxide, wherein during combustion of the cut filler composition, the oxyhydroxide compound is capable of decomposing to form at least one product capable of acting as an oxidant for the conversion of carbon monoxide to carbon dioxide and/or as a catalyst for the conversion of carbon monoxide to carbon dioxide.

Claim 11 recites A cigarette comprising a tobacco rod, wherein the tobacco rod comprises a cut filler composition comprising tobacco and an oxyhydroxide compound other than aluminum oxyhydroxide, wherein during smoking of the cigarette, said oxyhydroxide compound is capable of decomposing to form at least one product capable of acting as an oxidant for the conversion of carbon monoxide to carbon dioxide and/or as a catalyst for the conversion of carbon monoxide to carbon dioxide.

*Tamol* discloses an apparatus and a method for processing hot, moist extruded tobacco-containing materials which can include a filler of particulate

material including alumina, hydrated alumina, etc. However, hydrated alumina ( $\text{Al}(\text{OH})_3$ ) is not an oxyhydroxide compound ( $-\text{OOH}$ ). Furthermore, claim 1 recites an oxyhydroxide compound other than aluminum oxyhydroxide ( $\text{AlOOH}$ ), which is not disclosed or suggested by *Tamol*.

For at least the reasons set forth above, Applicants respectfully submit that claims 1 and 11 are allowable. Claims 2, 3 and 5 depend from claim 1 and claims 12, 13, 15, and 33 depend from claim 11 and are allowable for at least the same reasons. Withdrawal of the rejection is respectfully requested.

**2. 35 U.S.C. §103(a)**

a. *Tamol* in view of *Meier*

Claims 4, 7-10 and 17-20 are rejected under 35 U.S.C. §103(a) as allegedly unpatentable over *Tamol* in view of *Meier* (U.S. Patent Publication No. 2002/0195115). This rejection is respectfully traversed.

*Tamol* fails to disclose or suggest the combination of features of claims 1 and 11 for at least the reasons set forth above. *Meier* fails to cure the deficiencies of *Tamol*.

*Meier* discloses tobacco carrying catalytic active material including oxides and hydroxides of aluminum. As illustrated in Table A of *Meier*, aluminum oxides and hydroxides are utilized for the tobacco product carrying catalytic active material of *Meier*. However, claims 1 and 11 recite a cut filler composition comprising tobacco and an oxyhydroxide compound other than aluminum oxyhydroxide.

*Meier* discloses oxides and hydroxides not oxyhydroxides. As such, *Meier* fails to provide any motivation to modify *Tamol* in a manner which would suggest the

combinations of features recited in claims 1 and 11. Thus, Applicants respectfully submit that claims 1 and 11 are allowable. Claims 4 and 7-10 depend from claim 1 and claims 17-20 depend from claim 11 and are allowable for at least the same reasons. Withdrawal of the rejection is respectfully requested.

b. *Tamol* in view of *Meier* and *Gentry et al.*

Claims 6, 16 and 21-22 are rejected under 35 U.S.C. §103(a) as allegedly unpatentable over *Tamol* in view of *Meier* and further in view of *Gentry et al.* (U.S. Patent No. 5,074,321, hereinafter referred to as "*Gentry*"). The rejection is respectfully traversed.

For at least the reasons set forth above, *Tamol* and *Meier* fail to disclose or suggest the combinations of features recited in claims 1 and 11. *Gentry* fails to cure the deficiencies of *Tamol* and *Meier*. *Gentry* discloses a smokable material which may include an inorganic filler material therein. *Gentry* discloses examples of inorganic filler material which include carbonates, oxides, hydroxides, etc. However, *Gentry* fails to provide any motivation to modify *Tamol* in a manner which would produce the combination of features recited in claims 1 and 11.

For at least the reasons set forth above, Applicants respectfully submit that claims 1 and 11 are allowable. Claim 6 depends from claim 1 and claims 16, 21, and 22 depend from claim 11 and are allowable for at least the same reasons. Withdrawal of the rejection is respectfully requested.

c. *Heim et al*

Claims 1-22 and 35 are rejected under 35 U.S.C. §103(a) as allegedly unpatentable over *Heim et al.* (U.S. Patent No. 4,193,412, hereinafter referred to as "*Heim*"). This rejection is respectfully traversed.

*Heim* discloses an intimate mixture of at least two highly dispersed metal oxides or metal oxyhydrates (and not oxyhydroxides generally) of aluminum and/or calcium and/or magnesium and/or silicon and/or titanium. See col. 2, lines 60-63. Additionally, *Heim* discloses that the aluminum oxyhydrate used may be replaced without disadvantage by aluminum oxide monohydrate (AlOOH, boehmite) crystalline (gamma structure) with average particle size of 100 nanometers. See col. 6, lines 44-47. However, *Heim* fails to disclose or suggest an oxyhydroxide other than aluminum oxyhydroxide. As mentioned above, claims 1 and 11 recite an oxyhydroxide compound other than aluminum oxyhydroxide. *Heim* specifically states aluminum oxyhydrate, but fails to disclose or suggest the replacement of any other oxyhydrate other than the aluminum oxyhydrate being substituted without disadvantage by an oxide monohydrate (or oxyhydroxide). Therefore, Applicants respectfully submit that *Heim* fails to disclose or suggest the combinations of features recited in claims 1 and 11 including at least the feature of an oxyhydroxide other than aluminum oxyhydroxide.

For at least the reasons set forth above, Applicants respectfully submit that claims 1 and 11 are allowable. Claims 2-10 depend from claim 1 and claims 12-22 and 35 depend from claim 11 and are allowable for at least the same reasons. Withdrawal of the rejection is respectfully requested.

d. *Hardy*

Claims 1-3, 5, 11-13, 15 and 35 are rejected under 35 U.S.C. §103(a) as allegedly unpatentable over *Hardy* (International Publication No. WO 87/06104).

This rejection is respectfully traversed.

*Hardy* discloses tobacco products which include a mixture comprising tobacco and at least one substance selected from iron and zinc compounds of the type that are reduced to iron or zinc respectively on exposure to high temperatures. See page 1, lines 14-16. Further, *Hardy* states that:

Under the conditions existing in the combustion area of a tobacco product which is being smoked, such as a cigarette, incorporating for example ferric oxide in particulate form, the ferric oxide is reduced to iron. In this state immediately after reduction the iron is pure and highly reactive, dissociating water vapour into hydrogen and oxygen and also causing the preferential combination of nitrogen with hydrogen, rather than with oxygen and carbon, to form ammonia in trace quantities which vapourise. Thus the combination of nitrogen and carbon to form, for example, pyridenes is reduced if not eliminated. The use alternatively or additionally of zinc oxide produces a similar effect and increases the nicotine yield in the resulting smoke.

See page 1, last line to page 2, line 13 (emphasis added). Thus, *Hardy* discloses use of only ferric oxide and zinc oxide.

While *Hardy* does state that the most effective way of mixing zinc oxide and ferric oxide with tobacco is in a solution, *Hardy* also states that as the tobacco dries, the zinc oxide or ferric oxide is left as a deposit on the tobacco. *Hardy* does not disclose or suggest an oxyhydroxide compound as claimed in claims 1 and 11.

The Office Action states that:

*Hardy* is silent adding FeOOH to the tobacco product. However in mixing the tobacco with water and Fe<sub>2</sub>O<sub>3</sub> would result in a small amount of FeOOH being formed when it reacts with water (i.e. Fe<sub>2</sub>O<sub>3</sub> + H<sub>2</sub>O → 2 FeOOH) and thus meet the claimed limitation.

See page 5 of the Office Action. However, the above alleged FeOOH formation reaction cited in the Office Action is not disclosed or suggested by *Hardy* or any of the other cited references. Support and documentation for the alleged reaction including reaction conditions (*i.e.*, time, temperature, pressure, energy provisions, *etc.*) is hereby requested.

MPEP §2143 states that:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

Applicants submit that the Office Action does not provide the requirements mentioned above because the alleged reaction was not disclosed or suggested by the cited references, and therefore the prior art reference does not teach or suggest all the claim limitations. Thus, Applicants submit that a *prima facie* case of obviousness has not been established.

Additionally, *Hardy* clearly states that as the tobacco dries, the zinc oxide or ferric oxide is left as a deposit on the tobacco. See page 1, last line to page 2, line 13. Thus, *Hardy* does not disclose or suggest the use of an oxyhydroxide but rather only the use of oxides.

Further, claims 6 and 16 positively recite that the claimed oxyhydroxide compound would be present in an amount effective to convert at least 50% of the carbon monoxide to carbon dioxide.

For at least the reasons set forth above, Applicants respectfully submit that claims 1 and 11 are allowable. Claims 2, 3 and 5 depend from claim 1 and claims 12, 13, 15, and 35 depend from claim 11 and are allowable for at least the same reasons. Withdrawal of the rejection is respectfully requested.

**3. Conclusion**

Applicants invite the Examiner to contact Applicants' representative at the telephone number listed below if any issues remain in this matter, or if a discussion regarding any portion of the application is desired by the Examiner.

In the event that this paper is not timely filed within the currently set shortened statutory period, Applicants respectfully petition for an appropriate extension of time. The fees for such extension of time may be charged to our Deposit Account No. 02-4800.


In the event that any additional fees are due with this paper, please charge our Deposit Account No. 02-4800.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

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